

COMPLETE LISTING OF ALL CLAIMS IN THE APPLICATION

1. (currently amended) A continuous vapor-phase fluid-bed process for the preparation of ethylene homopolymers and copolymers having a density d of from 0.87 to 0.97 g/cm³ in which ethylene or mixtures of ethylene and C₃-C₈ α -monoolefins are (co)polymerized in the presence of a supported inorganic chromium catalyst and/or an organic chromium catalyst consisting of a one-core organometallic chromium compound wherein the support is α -porous metal oxide of groups 1-14 of the periodic table or SiO₂ in the polymerization zone of a vapor-phase fluidized-bed reactor under pressures ranging from 1 to 100 bar and at temperatures ranging from 30° to 125°C in the vapor phase in an agitated bed of bulk material comprising particulate polymer, the resultant heat of polymerization is removed by cooling the recirculated reactor gas and the resulting (co)polymer is removed from the vapor-phase fluidized-bed reactor, wherein, for the preparation of a (co)polymer of a specified density d , (co)polymerization is carried out at a temperature which is in a range restricted by an upper envelope defined by equation I

$$T_H = 171 + \frac{6d'}{0.84 - d'} \quad (I)$$

and a lower envelope defined by equation II

$$T_L = 173 + \frac{7.3d'}{0.837 - d'} \quad (II),$$

in which the variables have the following meanings:

T_H is the highest reaction temperature in °C;

T_L is the lowest reaction temperature in °C;

d' is the numerical value of the density d of the (co)polymer to be synthesized.

2. (original) A process as defined in claim 1, wherein a supported chromium catalyst is used which has been activated at a temperature between 600° and 800°C.

3. (previously presented) A process as defined in claim 1, wherein a supported chromium catalyst is used which has an average pore volume of from 1.0 to 3.0 mL/g.

4. (previously presented) A process as defined in claim 1, wherein ethylene is copolymerized.

5-9. (canceled)

10. (new) The continuous vapor-phase fluidized-bed process for the preparation of ethylene homopolymers and copolymers as claimed in claim 1, wherein the said chromium catalyst is prepared from chromium (VI) oxide, chromium salts, chromium (III) acetylacetonate, chromium hexacarbonyl, bis(cyclopentadienyl) chromium or bis(arene) chromium (0).